

Lab #: 235493 Job #: 17407
 Sample Name/Number: HW12
 Company: TechLaw, Inc.
 Date Sampled: 1/26/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: A3TA
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 2/03/2012 Date Reported: 2/20/2012

| Component | Chemical mol. % | $\delta^{13}\text{C}$ ‰ | δD ‰ | $\delta^{18}\text{O}$ ‰ |
|------------------------|--------------------|----------------------------|-----------------------|----------------------------|
| Carbon Monoxide ----- | nd | | | |
| Hydrogen Sulfide ----- | na | | | |
| Helium ----- | 0.0434 | | | |
| Hydrogen ----- | nd | | | |
| Argon ----- | 0.115 | | | |
| Oxygen ----- | 0.16 | | | |
| Nitrogen ----- | 4.54 | | | |
| Carbon Dioxide ----- | 0.073 | | | |
| Methane ----- | 94.06 | -35.90 | -196.7 | |
| Ethane ----- | 0.987 | -35.33 | -204.0 | |
| Ethylene ----- | nd | | | |
| Propane ----- | 0.0221 | | | |
| Propylene ----- | 0.0002 | | | |
| Iso-butane ----- | 0.0006 | | | |
| N-butane ----- | 0.0012 | | | |
| Iso-pentane ----- | nd | | | |
| N-pentane ----- | nd | | | |
| Hexanes + ----- | nd | | | |
| Water ----- | | | -64.6 | -9.60 |

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 972

Specific gravity, calculated: 0.580

Remarks:

**Ethane isotope data added on 4/26/2012.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.